

HOW TO DO THINGS WITH LOGIC.

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The Nature of Arguments

In discussing the uses of logic in the last chapter we noted that argumentation is one of the areas in which logic can be useful. Subsequent chapters are devoted to the various forms of argumentation. But before we explore these different varieties, we need to look at the general nature of arguments, that is, what they are and what they are not, what their parts are and what it means to evaluate an argument.

Statements are the basic building blocks of arguments. A statement is a sentence (or part of a sentence) that is true or false. (We will speak of *true* and *false* as the *truth values* a statement might take.) A sentence may have a truth value, and hence be a statement even if we do not know whether it is true or false. For example, "Jupiter has rings" is a statement that is true, although we did not know this until the Voyager transmitted data during its recent fly-by. As a general rule of thumb, declarative sentences such as the following are statements:

The moon is a bright yellow disc.

Questions, commands, and exclamations are not. Thus, the following are not statements:

Will you help me study for my exam tonight?

Get out of my way!

Ah, for the good old days!

(There are some tough cases and exceptions that need not concern us; for example, does "No new taxes!" have a truth value and therefore qualify as a statement?) Some logicians define statements in terms of the meaning behind a sentence rather than the sentence itself; by that definition, "Es gibt eine Deutschland" is a German sentence expressing the same statement as the English sentence "There is one Germany" (which was true prior to 1945, then false, then true again as of October 3, 1990).

Note that a complex declarative sentence may include more than one statement. If two or more parts of a sentence each has its own truth value and are asserted, then there will be two or more statements. So, for example, there are three statements in "We should have a lottery, because there are too many idle dollars

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and too few idle people in this state." In recognizing component statements, however, you must insure that the parts are each being asserted. In the following sentence there is only one statement, the one about the meteorologist's belief:

The meteorologist believes it will snow tonight.

The words *it will snow tonight* were not asserted by the person making the statement. She, in fact, may think the meteorologist is wrong.

Compare these three sets of statements:

- A. The picnic will be ruined.
- B. It is going to rain. Therefore the picnic will be ruined.
- C. If it rains, the picnic will be ruined. It is going to rain. Therefore, the picnic will be ruined.

Statement A is an assertion; someone who simply says "The picnic will be ruined" is claiming that it is true that the picnic will be ruined, but is providing no reason why you should accept that claim. It might seem to you that the claim is obviously true, but regardless of whether it is, it is merely an assertion. Set B makes the same claim, but here it is the conclusion of an argument that includes a premise as well. The premise ("It is going to rain.") is offered as a reason for accepting the conclusion ("The picnic will be ruined."). When joined with this premise, "The picnic will be ruined" is not a mere assertion but is the conclusion of an argument. However, with just these two statements as the building blocks, the argument lacks what we will call *validity*. Set C includes an additional premise that makes the argument logically valid. (We explore the notion of validity later in this chapter.)

ASSERTIONS: WHAT ARGUMENTS ARE NOT

The distinction between asserting a claim (as in A) and arguing for a claim (as in B and C) seems obvious enough, but in practice it is easy to forget. Often writers and speakers will pile assertion upon assertion, adding perhaps a few rhetorical appeals such as "as we all know to be true," or "and as anyone can see," and the effect can be that the audience actually feels it has been persuaded by a series of logically cogent arguments. Hitler was a master at this, using not only many of the rhetorical appeals at his disposal, but also the dramatic effects of lighting, music, candles, costumes, uniforms, and so on, to persuade his audience that what he was saying was true, all the while avoiding any semblance of argument. This practice of asserting without argument in fact has a long history. Socrates, the ancient Greek philosopher, spent his life challenging those who were unwilling to defend their beliefs with arguments. Similarly, St. Peter objected to religious believers who indulge in the practice of simply asserting their beliefs without benefit of argument, and he warned Christians in particular to be prepared to back up their beliefs with reasons in support of them—to be "ready always to give an answer to every man

that asketh you a reason of the hope that is in you, with meekness and reverence" (I Peter 3:15).

We have defined an argument as a particular way of combining statements: One or more statements (the premises) are cited as logical reasons to accept the truth of another statement (the conclusion). Henceforth when the word *argument* is used in this book, it should always be understood in this logical sense alone. There are other more familiar senses of *argument* that are not intended here. When one has an argument with one's neighbor, for example, reasons may or may not be presented, the truth of a statement may or may not be at issue (one party to such arguments not wanting to establish anything as true, but just wanting to voice a complaint, or air a grievance, or announce some feelings, perhaps), and at least one of the parties is usually angry. Logical arguments, however, do not necessarily involve any anger or feelings of any kind. Indeed the feeling of anger in particular is often thought to cloud logical arguments, so that "Let's be logical about it" is sometimes said as a means of ridding the discussion of hostility.

Another detail of the definition of *argument* that should be noted is that an argument need not be a good one. We have said that in an argument premises are presented that are intended to support the truth of a conclusion. But we have not required that they do so, nor have we said how well they must do so in order to qualify as an argument. This of course opens the doors quite wide—not so wide as to allow assertions and threats to qualify as arguments, but wide enough to allow the following: "They had a bad winter in Alaska last year because the *zampogna* is an Italian bagpipe." This is, to be sure, an extreme example of what might be allowed under our definition of argument, because it is virtually impossible to imagine how a fact about bagpipes could have anything at all to do with Alaska's recent weather, much less be intended to support the claim that it was bad. But it is best at this point to err on the side of inclusiveness, and to count as an argument any set of statements in which the truth of one statement is *intended* to be supported by the other statement (or statements). We can leave aside for now the question of how strong or convincing the intended support actually is.

ARGUMENTS AND INDICATOR WORDS

How do we know whether one statement is being cited in support of another? Speakers and writers typically use indicator words. These make it clear that statements have been combined into a logical argument by marking the role of one or more of the statements. Because there are two different roles that statements can play in an argument, there are two types of indicator words. Premise indicator words tell you that the statement to which they are attached is a premise; for example, "Because Melinda sold the most mutual fund shares this year, she will get the promotion to vice president." The indicator word "because" explicitly marks "Melinda sold the most mutual fund shares this year" as the premise of an argument; from that you can infer that "she will get the promotion to vice president" (the only other statement) is the conclusion that the premise supports. Conclusion indicator

words offer an alternative way to assign roles; for example, the same argument could be conveyed by "Melinda sold the most mutual fund shares this year; *thus* she will get the promotion to vice president." Occasionally both kinds of indicator words are used together to mark explicitly both the premise and conclusion: "*Inasmuch as* Melinda sold the most mutual fund shares this year, *one must conclude that* she will get the promotion to vice president." This approach may sound pedantic, and cannot even be used with most indicator words. (For example, you cannot say "Because Melinda sold the most mutual fund shares this year, *thus* she will get the promotion to vice president.")

The use of indicator words is an option that helps avoid ambiguity; it is not a requirement. The following sentence would most likely be properly understood as a premise followed by a conclusion even though there are no indicator words: "Melinda sold the most mutual fund shares this year; she will get the promotion to vice president." Most people hearing this sentence would know that top sales performance tends to be rewarded by a promotion, and would apply that knowledge to arrive at the most plausible interpretation. When a more surprising argument is being made, or listeners lack the necessary background knowledge, indicator words are more important. Observe what happens when we omit the word *because* from the example given earlier: "They had a bad winter in Alaska last year; the *zampogna* is an Italian bagpipe." This sounds like a recital of trivial facts, not an argument. When the word "because" is included (in place of the semicolon) we are forced to regard the sentence as an argument despite the difficulty of surmising the connection between Alaskan weather and Italian bagpipes: "They had a bad winter in Alaska last year *because* the *zampogna* is an Italian bagpipe."

The bagpipe sentence also illustrates that the premise need not precede the conclusion when we write out arguments in English. Most premise indicator words can be used with either way of ordering the argument. Returning to the Melinda example in which we marked the premise, it is perfectly correct to put the premise second: "Melinda will get the promotion to vice president, *because* she sold the most mutual fund shares this year." This puts the premise indicator word (*because*) in the middle of the sentence, and hence shifts the focus from the reason giving to the conclusion. It is more difficult to vary the order when you use a conclusion indicator word. With few exceptions, conclusion indicator words sound correct only when they follow a premise. Notice how odd it sounds if we reverse our previous example to get: "Thus Melinda will get the promotion to vice president; she sold the most mutual fund shares."

You can improve your argumentative writing by putting some thought into how you order your statements (and then choosing your indicator words from those that are appropriate for the order chosen). Either order of premise and conclusion is logically correct; however, each order creates a different impression on your audience, and you can use this to your advantage. In writing an argumentative essay, it is generally advisable to use the conclusion-premise order in your introductory paragraph, and the premise-conclusion order in your concluding paragraph. The conclusion-premise order is an attention getter, which you may want to open with: "I shall demonstrate that mood-altering drugs should be legalized, based upon the

social and economic effects of controlling access to these substances." The premise-conclusion order can provide an effective close, because the conclusion of the argument can serve as the conclusion of the paper: "Given the evidence I have presented that legal control of mood-altering drugs has produced a variety of negative effects in the social and economic domains, it follows that legalization should be implemented without delay." (Note that approximately the same statements regarding social and economic effects are conveyed by a noun phrase in the opener and a clause in the close.)

Words and phrases typically used to indicate that a premise is being presented are listed here. The two words marked with an asterisk (*) at the bottom are the only ones that cannot be used with either order of premise and conclusion. (If a premise is indicated by *whereas* it must precede the conclusion; if it is indicated by *for* it must follow the conclusion.)

PREMISE INDICATOR WORDS

| | |
|--------------------|----------------------------|
| because (of) | given that |
| granted that | as |
| assuming that | as is implied by |
| supposing that | seeing that |
| as is shown by | based on (the fact that) |
| inasmuch as | owing to (the fact that) |
| is clear from | in light of the fact that |
| follows from | by virtue of the fact that |
| as we know from | due to (the fact that) |
| as we can see from | (for) the reason that |
| insofar as | *whereas |
| *for | |

Words and phrases typically used to indicate that a conclusion is being stated are listed next. The two words marked with an asterisk (*) at the bottom are the only ones that can be used with either order of premise and conclusion. All of the other words require that the conclusion follow the premise.

CONCLUSION INDICATOR WORDS

| | |
|------------------------------|----------------------------|
| thus | for this (these) reason(s) |
| therefore | so we see that |
| so | implies that |
| hence | means that |
| as a result | shows that |
| consequently | proves that |
| as a consequence | suggests that |
| it follows that | demonstrates that |
| leads to the conclusion that | is evidence that |
| *one must conclude that | *it may be inferred that |

These lists are by no means complete. English is a rich language that offers many other ways of indicating the roles of premises and conclusions. Neither is it the case that every time one of these words appears between two statements, an argument necessarily occurs there. *Thus* is an often-used conclusion indicator, for example, but in the sentence, "Georgia has many fine whitewater rivers; thus the Chattooga, Cartecay, Toccoa, Chestatee, and Tesnatee all flow within its boundaries," *thus* functions to introduce some illustrations of what has been claimed, not to conclude anything on the basis of what has been claimed.

Some of the words and phrases in the previous lists may sound quite stilted to you, and you may feel uncomfortable using them to construct arguments. You will have to judge from the context of the situation in which you are presenting an argument which words (if any) to use to mark premises and conclusions. "From the considerations given above, we can see that it necessarily follows that. . ." might be entirely appropriate for a college essay in which you argue that the causes of the Crimean War were of a certain kind, but will sound absurd when you are trying to convince a classmate to accompany you to a movie.

STANDARD FORM

As we have just seen, when arguments are written out in ordinary English sentences, the premises can either precede or follow the conclusion. The order chosen will place some limitations on which indicator words can be used, but this is not an onerous constraint, and the order can be varied to focus the reader's attention appropriately. For some purposes, however, it is better to have one precise format in which any argument can be displayed; this makes it easier for you to compare and analyze different arguments. Arguments arranged in this way are said to be put in standard form. To put an argument in standard form we must satisfy the following requirements:

1. Write each of the premises and the conclusion on a separate line, listing the premise(s) first and the conclusion last.
2. Omit the premise and conclusion indicators.
3. Omit words that do not contribute to the content of the premises or conclusion, such as "in my opinion," and so forth.
4. Fill in each statement so that it stands on its own as a separate, complete sentence; for example, replace third-person pronouns with noun phrases to make reference clear.
5. Draw a horizontal line to separate the conclusion from the premise(s).
6. Write a triangle of dots (∴) in front of the conclusion, which is understood as meaning *therefore*.

Thus, Argument C near the beginning of this chapter would be represented in standard form as:

If it rains, the picnic will be ruined.

It is going to rain.

∴ The picnic will be ruined.

In this example there are two premises and one conclusion. Every argument has exactly one conclusion, but it is quite possible to have less than or more than two premises per argument. Here is an argument with one premise:

No turtles can fly.

∴ None of the things that can fly are turtles.

Here is an argument with four premises:

If birds are flying and fish are swimming and trees are swaying, then the ozone layer must still be OK.

Birds are flying.

Fish are swimming.

Trees are swaying.

∴ The ozone layer is still OK.

GOOD AND BAD ARGUMENTS

So far we have seen how arguments differ from mere assertions, how arguments can be divided into their parts (one or more premises and a conclusion), and how the parts can be displayed in standard form. We have suggested that some arguments are better than others, but have not yet developed the tools needed to evaluate arguments—that is, to rank or grade them in terms of how good or bad they are. In this section we begin to acquire those tools.

On what basis can we grade arguments? The grounds that we adopt are to assess arguments by asking how good they are at doing what they're intended to do. You will recall from our definition of *argument* that arguments are intended to provide reasons that support the truth of statements. Our standard for assessing arguments, then, will be how well the reasons (or premises) they present actually do support the truth of their conclusions.

This is very different from asking how *persuasive* arguments may be. The question "how well do the premises support the conclusion?" is a logical question, whereas the question about how persuasive an argument may be is a psychological one. Psychology is not part of the subject of this book, so when we assess arguments we do not take into account their persuasiveness. If we were interested in persuasion and persuasive techniques, we would want to ask, for example, whether the most persuasive way of presenting several arguments in an essay is to present the strongest first, ending with the weakest, or vice versa. And we would want, perhaps, to ask whether it is more persuasive to say "As I have shown" or "As we have seen," and whether an argument that relies on or appeals to numbers—"Everybody's doing it. Shouldn't you be?", for example—is more persuasive when directed at middle or lower-income audiences. All of these are matters that do and should interest the

social psychologist who is interested in what makes people believe the things they do and act the ways they do. But as interesting as these matters might be, they are not part of the subject of logic.

Good arguments are not necessarily persuasive ones, then, and persuasive ones need not be good ones. But although persuasion cannot be the sole aim of logic, it is not totally irrelevant either. Finding the most effective means of presenting arguments that are logically good is certainly a worthwhile task, and there are textbooks that will give you advice on how to argue persuasively—when to use figures of speech in your arguments, how to establish credibility as an arguer, whether to state your conclusion first or last, and so on. These persuasive techniques should be used, however, only with arguments that have already been determined to be logically good. To this extent, logic and the art of persuasion should be seen as complementary, the study of logic leading one to the study of persuasion, but neither of them being sufficient by itself.

Let's turn, then, to see what goes into making arguments logically good or bad. We may begin by comparing two arguments that have been written in standard form (notice how much that helps in comparing them):

- D. All lapwings have crests.
The bird in the bush doesn't have a crest.
 ∴ The bird in the bush can't be a lapwing.
- E. All lapwings have crests.
The bird in my hand has a crest.
 ∴ The bird in my hand is a lapwing.

In Argument D the bird in the bush can't be a lapwing (as the conclusion states) if the premises are true. But the bird in Argument E might, for all we know from the evidence given in the premises, have a crest and still not be what the conclusion says it must be, a lapwing. The reason is that there may be other birds with crests, for all we know from the premises, and the bird in my hand may be one of them. What this means is that if you had to place a bet, the conclusion in D would be a much better bet than that in E, given the truth of the premises of both. (In fact, if the premises really are true, it is not just a good bet, but a sure bet.) If the premises in D are true, the conclusion *must also be true*, whereas the premises in E might be true and the conclusion *could* still be false. If the conclusion is true (That bird in my hand is a lapwing), it is for some reason other than the premises supplied in E. The criterion we have just introduced marks the critical logical distinction between *valid* and *invalid* arguments: Valid arguments are arguments in which, if the premises are true, the conclusion must be true. Thus, D is valid whereas E is invalid. (Suggestion: Write "Valid" next to Argument D and "Invalid" next to Argument E to remind yourself of this difference.)

Returning to Argument D, we note that determining that its form is valid is only part of deciding whether it is a good argument. If you had (foolishly) bet your life on the conclusion of D, you would want to do more than ask just whether *if the premises of D were true*, would its conclusion also be true. Before you bet that the

bird in the bush was not a lapwing you would no doubt want to find out whether it really was true that all lapwings have crests. If this weren't true, then the argument would not offer a sufficient reason to conclude that the bird was not a lapwing. If you could be absolutely sure of this fact about lapwings, however, and absolutely sure that the bird in the bush didn't have a crest, then the bet would be quite safe.

The distinction we have just been using, between what the argument would or would not show, *if* the premises were true, and whether the premises are in fact true, is one of the most important distinctions in logic. (Unfortunately, it is also a slippery one to grasp, so do not be discouraged if you must work through it more than once to get the distinction firmly fixed in your mind.) Based on this distinction, every argument can be evaluated in two different ways. When we ask whether the premises of an argument are true we have, so to speak, to look "outside" the argument to find the answer. In examples D and E we should have to ask whether it's true that the bird in the bush does not have a crest, whether the bird in my hand does have a crest, and whether it's a fact that lapwings all have crests. These are all claims made *in* the argument, about the world that is outside and independent of the argument. "Is the world the way the premises state that it is?" is the appropriate question to ask when we are evaluating the truth of the premises of an argument.

On the other hand, when we examine validity we *freeze* the truth of the premises of an argument, and ask whether, if those premises were true, it would show what it claims to show. We are now looking *inside* the argument, to see not how the world is, but how *it* is. We are then looking at what logicians call the *logical form* of the argument to see, regardless of what the premises are about and regardless of whether they are true, whether the relation they bear to each other and to the conclusion is or is not such that, if they were true, the conclusion would be guaranteed to be true. That is, there are certain forms of argument for which, if the premises were true, the conclusion would also have to be true. If an argument displays this kind of logical form, it is a valid argument. If it does not, we say that the argument is invalid. Whether or not the premises are actually true does not enter into determining validity; validity has to do with the form of the argument, not the argument's specific content or the match between the content and the world.

Hence, there are two conditions that an argument must satisfy if it is to be evaluated as a good argument: (a) all of its premises must be true (we might call this the condition of *truthfulness*); and (b) its form must be valid. Logicians call an argument that satisfies both of these conditions a *sound argument*. More informally, we can say that an argument is good if both its content and form are good. Logicians are more interested in form than in content, referring to a valid argument when the form is such that if the premises are true, then the conclusion must also be, regardless of whether the premises are actually true.

In fact, evaluating arguments on the basis of both truth and validity yields four different categories of arguments; any particular argument will fall into exactly one of these categories. An argument may be (a) valid with true premises; (b) valid with at least one false premise; (c) invalid with true premises; or (d) invalid with at least one false premise. Category a corresponds to *sound* arguments; categories a and b

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together are the *valid* arguments; categories c and d together are the *invalid* arguments; and categories b, c, and d together are the *unsound* arguments. There are no special names for any other categories or combinations of categories. Here are examples of each of these kinds of arguments:

- | | |
|--|---|
| 1. If Atlanta is the capital of Georgia, then Georgia's governor has an office in Atlanta. <u>Atlanta is the capital of Georgia.</u> ∴ Georgia's governor has an office in Atlanta. | Valid form True premises |
| 2. If Birmingham is the capital of Georgia, then Georgia's governor has an office in Birmingham. <u>Birmingham is the capital of Georgia.</u> ∴ Georgia's governor has an office in Birmingham. | Valid form At least one false premise |
| 3. If Atlanta is the capital of Georgia, then Georgia's governor has an office in Atlanta. <u>Georgia's governor has an office in Atlanta.</u> ∴ Atlanta is the capital of Georgia. | Invalid form True premises |
| 4. If Birmingham is the capital of Georgia, then Georgia's governor has an office in Birmingham. <u>Georgia's governor has an office in Birmingham.</u> ∴ Birmingham is the capital of Georgia. | Invalid form At least one false premise |

Only Argument 1 has both true premises and a valid form. As already noted, it is the only one of the four that we shall call a *sound* argument. All of the others we shall call *unsound*. Argument 2 fails the truthfulness condition, Argument 3 fails the validity condition, and Argument 4 fails both.

The reason Arguments 3 and 4 fail the validity condition is not obvious, and is explained in the next chapter. It is easier to see how Arguments 2 and 4 fail the truthfulness condition. The second premise of each of these arguments was clearly false, because these premises stated facts that could be shown to be incorrect. By consulting reference books, you could find that Birmingham is not the capital of Georgia and that Georgia's governor does not have an office in Birmingham. As for the first premise, it happens to be the same for both arguments and also happens to be true. This does not help, however: The truthfulness condition is satisfied only if all of the premises of an argument are true. If any premise is false, then the truthfulness condition has been violated and the argument is thereby unsound. This is not to say that people who use an argument in which both premises are false should not have more logical *fault* found with their argument than someone who uses an argument in which only one premise is false but the other(s) true. When you begin to criticize the arguments of others, you will want to ask whether each of the premises of the argument you are considering is true. An argument in which two premises are false is a "worse" argument than one in which only one is, and

one that is invalid and both of whose premises are false is worse than one that is valid and has false premises.

In considering what it takes for an argument to be sound, we have spoken so far of valid or invalid arguments, and of those with true or false premises, but as yet we have not mentioned conclusions, and the possibility that they may be true or false. Surely, you may feel, we have to require that an argument have a true conclusion before we count it as sound! We do not need to impose this as a separate requirement. Sound arguments will always have true conclusions, but this is a consequence of being valid and having true premises. The definition of *valid* told us that whenever all the premises were true, then the conclusion would also have to be true. Given that a sound argument is valid, and also has true premises, then it follows that its conclusion must be true! We can have valid arguments with false conclusions, invalid arguments with false conclusions, arguments with true premises but false conclusions, and arguments with false premises and false conclusions. But the one thing that never can occur is an argument that is sound—that is, has true premises and a valid form—that also has a false conclusion. The combination of true premises and valid form guarantees that the conclusion of such an argument will be true, and so it goes without saying that sound arguments have true conclusions.

ENTHYMEMES

Consider again Argument B near the beginning of this chapter. Just one premise is explicitly stated, so the standard form would seem to be:

It is going to rain.
 ∴ The picnic will be ruined.

As we noted earlier, this meets the minimum requirements for an argument, but it is not a valid argument. Valid arguments have a logical form in which, if the premise(s) are true, the conclusion must also be true. But this is not true here. The first assertion might be true even when the second is false. Generally we get a valid form by using a *logical operator* such as “if A, then B” or “either A or B” in one of the premises. Typically this is followed by a second premise that includes the appropriate part of the first premise (here, A), and then a conclusion that includes the other part of the first premise (here, B). In the next chapter we examine many such valid forms, but what we need to note now is that sometimes when arguments are stated, they won’t contain all of the premises required to make them valid. At other times it will be the conclusion that is omitted. Arguments in which one (or more) of the premises or the conclusion is not explicitly stated are called *enthymemes* (pronounced en-thi-meems).

Often we can look at an enthymeme and see what missing premise or conclusion needs to be added in order to make it valid. When we can infer what premise or conclusion must be added to make an enthymeme into a valid argument, we can include it in our representation of the argument in standard form as long as we place

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what we add in parentheses to make clear that it was inferred rather than explicitly stated. Hence, an alternative rendition of Argument B in standard form looks very similar to that of Argument C; the only difference is the parentheses:

(If it is going to rain, the picnic will be ruined.)

It is going to rain.

∴ The picnic will be ruined.

As you will learn in the next chapter, this form, like C but unlike B, is valid. There is, of course, a danger here that the original arguer did not intend the inferred premise; perhaps the arguer meant exactly what was said, and no more. In ordinary life, however, you are usually on firm ground if you fill in a missing premise to make an enthymeme into a valid argument. For example, the various forms of the Melinda argument presented earlier could all be represented by the following standard form:

Melinda sold the most mutual fund shares this year.

∴ Melinda will get the promotion to vice president.

To make this enthymeme into a valid argument with the same form as we used before, we could add a premise such as the following:

(If Melinda sold the most mutual fund shares this year, then Melinda will get the promotion to vice president.)

Melinda sold the most mutual fund shares this year.

∴ Melinda will get the promotion to vice president.

One reason people omit premises is that it is often easier in English prose to produce or understand an incomplete argument than a complete, valid one! An argumentative essay in which every premise and conclusion is spelled out in every detail is very tedious to read. Another reason people omit premises is to be polite. Suppose you ask to use the telephone in a small shop. A polite way for the manager to deny your request is to state a reason for denial, leaving the denial itself implicit: "Oh, this is not a public phone." It is only because you are able to carry out the appropriate logical inference that this amounts to a "No." This seems effortless and instantaneous, but writing the complete, valid argument in standard form makes it clear how much logical work goes on in being polite:

Members of the public may not use this phone.

(You are a member of the public.)

∴ You may not use this phone.

(Notice that both a premise and conclusion must be inferred here.)

We study enthymemes in more detail in the next chapter, noting now only that whereas it is important that you be able to spot them in other people's arguments, there are hazards as well as benefits in using them in your own writing and speaking. The greatest hazard is that you will fail to be understood, or that the conclusion of your argument will not be grasped by your audience. Because there is always

something missing in an enthymeme, when you use one you risk having someone not supply the missing part, thereby undercutting the whole purpose of your argument. On the other hand, an advantage of enthymemes that unscrupulous arguers sometimes employ is that they can be used to *hide* weak premises. Often people use them just so they won't have to state a weak premise, with the hope that their audience will infer it implicitly without thinking about it, and not notice how weak it is. Another advantage of enthymemes is psychological—the level of conviction about the conclusion of an argument is often raised when one's audience has to “work through” the argument itself. Working through an argument can lead, so to speak, to making it one's own, so that listeners who draw the conclusion out of an enthymeme may feel that they are *adopting* the conclusion, rather than having it forced on them by someone else. They may feel that the argument is more *theirs* and less *yours*.

Now that we have seen what it is for an argument to be valid or invalid, to have false or true premises, and to be sound or unsound, it is time to turn to a consideration of the various kinds of argument forms that are valid and invalid. This is the subject of the next chapter.